

Trend Study 17-9-02

Study site name: Lower Big Hollow.

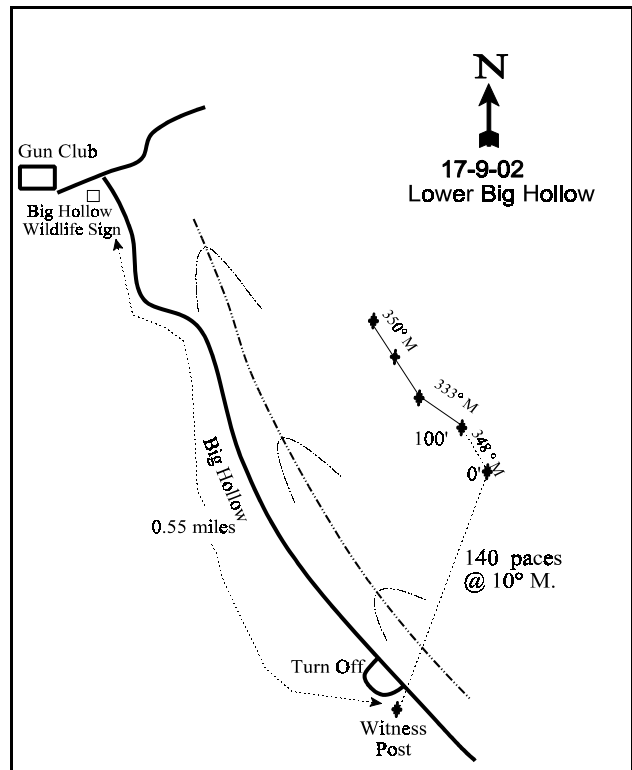
Vegetation type: Mixed Oak-Sage.

Compass bearing: frequency baseline 346 degrees magnetic.

Frequency belt placement: line 1 (11 & 95ft), line 2 (71ft), line 3 (59ft), line 4 (34ft). Rebar: belt 5 on 3ft.

LOCATION DESCRIPTION

Beginning at the gun club parking lot at the mouth of Big Hollow, proceed east 0.10 miles to the road which runs up Big Hollow. Turn right and proceed up Big Hollow for 0.55 miles to a turnoff to the south and a green steel "T" fencepost. From the fencepost, the 0-foot baseline stake is located 140 paces away across Big Hollow, at an azimuth of 10 degrees magnetic. A red browse tag, number 67, is attached to the 0-foot stake of the frequency baseline.



Map Name: Charleston

Diagrammatic Sketch

Township 4S, Range 5E, Section 19,

GPS: NAD 27, UTM 12S 4477987 N 46435 E

DISCUSSION

Lower Big Hollow - Trend Study No. 17-9

This study is located on Division property approximately ½ mile above the mouth of Big Hollow. Aspect is to the southwest with a moderate (30%-35%) slope. Elevation is approximately 6,200 feet. The site samples a mountain brush community with a rather sparse native understory. The majority of Big Hollow, at least the portion south of the stream, was consumed by an extremely hot fire in 1976. It was seeded the following fall with perennial grasses and forbs. Wildlife use during the winter is probably restricted to more open, snow-free winters. In management terms, the area may be equally or even more important as fawn rearing habitat for deer and spring-fall range for elk. During 1983, at least two yearling bucks and several does with fawns were observed in the vicinity. In 1996, several deer were observed on the sight as well as a deer carcass. Pellet group transect data collected in 2002 estimated 38 deer days use/acre (94 ddu/ha) and 4 elk days use/acre (10 edu/ha).

Textural analysis indicates the soil is a sandy clay loam with neutral reactivity (pH of 7.1). Average soil temperature was 49°F at 16 inches in depth in 1996. The soil is moderately deep with many small rocks on the surface. Effective rooting depth was estimated at over 14 inches. Litter from dead cheatgrass and Gambel oak leaves is abundant. Soil erosion appears slight. Vegetative cover was estimated at 43% in 1996, declining slightly to 38% in 2002. Litter cover is quite high at 59% in 1996 and 55% in 2002. The soil surface has a prevalence of large rocks, which together with pavement made up 13% and 19% of the surface cover respectively in 1996 and 2002. Bare ground cover was estimated at 12% in 2002, the highest level in any reading. A erosion condition class assessment done in 2002 gave soils a stable to slightly erosion rating.

The sagebrush on this site appears to be a mix of basin big sagebrush (*Artemisia tridentata tridentata*) and mountain big sagebrush (*Artemisia tridentata vaseyana*), although all plants were classified as mountain big sagebrush. Density was estimated between 1,500 and 2,000 plants/acre in all years. The population has shown light to moderate use in all readings. Poor vigor and decadence have been at acceptable levels, with the exception of 1989, when 28% of the population displayed poor vigor and 76% of the population was classified as decadent. Young recruitment has been low in all years, except for the 1996 reading, when young plants made up 22% of the population. The dead to live ratio remained about the same in 1996 and 2002 at 1:2.5. Sagebrush leaders averaged just under 2 inches of growth in 2002.

Several bitterbrush plants are scattered across the site and exhibit moderate to heavy hedging. Mature plants are just over 2 feet in height and have a clubbed appearance. Serviceberry increased in 2002 due to the abundance of young plants (260 plants/acre). In 2002, moderate and heavy use increased and decadence was low (15%), but 45% of the serviceberry plants displayed poor vigor. The population of Gambel oak is increasing on the site. Density was estimated at 1,200 stems/acre in 1996, increasing to 2,840 stems/acre in 2002. Use on oak is mostly light, vigor is good, and decadence is low. Young stems were moderate in abundance for 1996 and 2002, respectively at 17% and 15% of the population. The oak clones provide some escape and cover for wildlife during the summer and fall. Increaser shrubs are represented by small numbers of broom snakeweed and prickly pear cactus.

The herbaceous understory has fairly high diversity, but desirable species are limited. Nine perennial grass species have been sampled in at least one year, but cheatgrass is the dominant grass. Nested frequency and cover of cheatgrass declined in 2002 due to the dry conditions, but quadrat frequency remained nearly the same at over 80%. Bluebunch wheatgrass and Sandberg bluegrass are the most abundant perennials with a nested frequency values around 50 in 2002. The forb composition has contained a lot of weeds and increasers including aster, thistle, and curlycup gumweed. In 2002, most forbs were inconsequential with perennial species declining in sum of nested frequency by 72%. Annual forbs slightly increased in nested frequency in 2002.

1983 APPARENT TREND ASSESSMENT

Soil appears stable. Some erosion pavement is evident but overall, vegetative and litter cover provide good protection. A cautionary note might refer to the abundance of annual grasses in the understory. Cheatgrass constitutes a fire hazard and is relatively ineffective in holding soil when cured and subjected to high intensity thunderstorms. Vegetative trend of the important shrub species appears stable. The herbaceous understory is below optimum in forage quality and production to provide good fawning habitat.

1989 TREND ASSESSMENT

Trend for mountain big sagebrush now appears slightly downward based on the high percentage of decadence (76%) and poor vigor (28%) in the population. The lack of sagebrush seedlings and the increase of competing oakbrush also are negative factors. The herbaceous understory remains in poor condition with a less than desirable composition and poor production. Sum of nested frequency of perennial species increased for both grasses and forbs so trend is slightly up. Trend for soil is also slightly up as bare soil decreased and perennial grasses and forbs increased.

TREND ASSESSMENT

soil - slightly up (4)

browse - slightly down (2)

herbaceous understory - slightly up (4)

1996 TREND ASSESSMENT

The soil trend is stable at this time. There is adequate vegetation and litter cover to reduce soil movement. Bare soil is low at 3%. The mountain big sagebrush population has shifted from a mostly decadent population to a vigorous mature population. Utilization of mature plants has declined since 1989 with vigor improving significantly. Recruitment by young sagebrush increased to 22% of the population. Other browse, such as true mountain mahogany and antelope bitterbrush, show heavy utilization and a slight clubbed appearance. Overall, the browse trend is slightly upward. Although the herbaceous understory does have a few valued species, it is dominated by cheatgrass. As reported in 1983, this amount of cheatgrass constitutes a fire hazard which could eliminate the valuable browse forage species now present. The herbaceous component is especially important if the area is to be considered spring range or fawning habitat. Herbaceous trend is slightly up with increases in sum of nested frequency values for perennial grasses and forbs.

TREND ASSESSMENT

soil - stable (3)

browse - slightly up (4)

herbaceous understory - slightly up (4)

2002 TREND ASSESSMENT

Trend for soil is slightly down. With drought conditions in 2002, bare soil increased from 3% to 12%, with vegetation and litter cover both slightly declining. Total herbaceous cover declined from 23% to 18%. However, the ratio of protective cover to bare soil remains good at nearly 4:1. Erosion is minimal at the present time. Trend for browse is stable. Density of mountain big sagebrush slightly increased, but decadence and poor vigor did as well. Young plants declined to only 3% of the population and no seedlings were sampled. Use remains light to moderate. Serviceberry density increased from 120 plants/acre to 400 plants/acre due to an abundance of young in 2002 (260 plants/acre). However, utilization increased with 45% of the population displaying poor vigor. Trend for the herbaceous understory is slightly down. Sum of nested frequency values of perennial grasses and forbs decreased with the dry conditions in 2002. The composition remains poor with the abundance of annuals and weeds.

TREND ASSESSMENT

soil - down slightly (2)

browse - stable (3)

herbaceous understory - slightly down (2)

HERBACEOUS TRENDS --
Herd unit 17 , Study no: 9

T y p e	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'83	'89	'96	'02	'83	'89	'96	'02	'96	'02
G	Agropyron intermedium	-	-	16	12	-	-	4	3	.81	.76
G	Agropyron spicatum	_a 8	_b 15	_b 64	_b 51	3	8	19	17	3.34	3.95
G	Bromus inermis	-	2	3	6	-	1	1	2	.15	.33
G	Bromus japonicus (a)	-	-	_a 2	_b 8	-	-	1	3	.00	.16
G	Bromus tectorum (a)	-	-	_b 298	_a 240	-	-	84	81	13.48	7.15
G	Dactylis glomerata	-	3	1	-	-	2	1	-	.00	-
G	Poa bulbosa	_a -	_a -	_a 1	_b 7	-	-	1	3	.03	.53
G	Poa fendleriana	1	8	9	5	1	3	3	2	.56	.18
G	Poa pratensis	_{ab} 6	_b 19	_b 24	_a -	4	7	8	-	.28	-
G	Poa secunda	_a 10	_b 48	_{ab} 32	_b 50	5	17	12	21	.62	1.14
G	Sitanion hystrix	-	-	1	3	-	-	1	1	.03	.15
Total for Annual Grasses		0	0	300	248	0	0	85	84	13.49	7.31
Total for Perennial Grasses		25	95	151	134	13	38	50	49	5.84	7.06
Total for Grasses		25	95	451	382	13	38	135	133	19.33	14.38
F	Agoseris glauca	-	1	-	-	-	1	-	-	-	-
F	Alyssum alyssoides (a)	-	-	_b 163	_a 102	-	-	54	37	1.13	.82
F	Arabis spp.	_b 28	_b 17	_b 18	_a -	14	8	7	-	.03	-
F	Aster spp.	-	7	7	6	-	3	2	2	.03	.03
F	Astragalus spp.	-	2	-	-	-	1	-	-	-	-
F	Balsamorhiza sagittata	-	7	5	9	-	2	3	5	.68	1.14
F	Castilleja chromosa	3	2	-	-	1	1	-	-	-	-
F	Camelina microcarpa (a)	-	-	-	4	-	-	-	4	-	.08
F	Calochortus nuttallii	-	3	-	2	-	2	-	1	-	.00
F	Chaenactis douglasii	-	-	4	-	-	-	3	-	.06	-
F	Cirsium spp.	-	-	6	-	-	-	4	-	.23	-
F	Collomia linearis (a)	_a 5	_a -	_a 2	_b 29	3	-	1	13	.03	.06
F	Comandra pallida	-	-	6	3	-	-	2	1	.01	.00
F	Collinsia parviflora (a)	-	-	-	3	-	-	-	1	-	.00
F	Crepis acuminata	-	-	-	11	-	-	-	5	-	.30
F	Descurainia spp. (a)	-	-	3	-	-	-	1	-	.00	-
F	Epilobium brachycarpum (a)	-	-	2	-	-	-	1	-	.00	-
F	Erigeron spp.	_a -	_a -	_b 25	_a -	-	-	10	-	.42	-
F	Galium spp.	-	-	-	3	-	-	-	2	-	.15
F	Grindelia squarrosa	-	-	3	-	-	-	1	-	.00	-
F	Hackelia patens	_a 9	_{ab} 26	_b 37	_a 9	5	13	19	6	.38	.09
F	Holosteum umbellatum (a)	-	-	_a -	_b 11	-	-	-	7	-	.06
F	Ipomopsis aggregata	-	6	3	-	-	3	1	-	.00	-

T y p e	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'83	'89	'96	'02	'83	'89	'96	'02	'96	'02
F	Lappula occidentalis (a)	-	-	-	4	-	-	-	2	-	.03
F	Lactuca serriola	-	7	1	-	-	3	1	-	.01	-
F	Machaeranthera canescens	_a -	_b 16	_b 20	_a -	-	9	10	-	.22	-
F	Microsteris gracilis (a)	-	-	_a -	_b 26	-	-	-	11	-	.27
F	Orthocarpus tolmiei (a)	-	-	3	12	-	-	1	5	.03	.02
F	Polygonum douglasii (a)	-	-	2	-	-	-	1	-	.00	-
F	Senecio multilobatus	_b 25	_b 25	_a 3	_a 2	14	14	3	1	.07	.00
F	Solidago sparsiflora	3	-	-	-	1	-	-	-	-	-
F	Tragopogon dubius	_b 7	_b 10	_b 19	_a -	5	4	9	-	.17	-
F	Viguiera multiflora	-	-	3	-	-	-	2	-	.01	-
Total for Annual Forbs		5	0	175	191	3	0	59	80	1.21	1.36
Total for Perennial Forbs		75	129	160	45	40	64	77	23	2.37	1.74
Total for Forbs		80	129	335	236	43	64	136	103	3.59	3.10

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --

Herd unit 17 , Study no: 9

T y p e	Species	Strip Frequency		Average Cover %	
		'96	'02	'96	'02
B	Amelanchier alnifolia	4	5	1.93	2.29
B	Artemisia tridentata vaseyana	49	59	11.55	12.98
B	Gutierrezia sarothrae	5	0	.06	-
B	Mahonia repens	1	0	-	-
B	Opuntia spp.	7	6	.18	.03
B	Purshia tridentata	6	6	1.82	.68
B	Quercus gambelii	24	30	6.91	6.28
B	Symphoricarpos oreophilus	4	7	.06	.56
Total for Browse		100	113	22.52	22.85

CANOPY COVER -- LINE INTERCEPT

Herd unit 17 , Study no: 9

Species	Percent Cover	
	'96	'02
Amelanchier utahensis	-	.83
Artemisia tridentata vaseyana	-	16.50
Opuntia spp.	-	.17
Purshia tridentata	-	1.75
Quercus gambelii	.8	8.58
Symphoricarpos oreophilus	-	.17

Key Browse Annual Leader Growth

Herd unit 17 , Study no: 9

Species	Average leader growth (in) '02
Artemisia tridentata vaseyana	1.9

BASIC COVER --

Herd unit 17 , Study no: 9

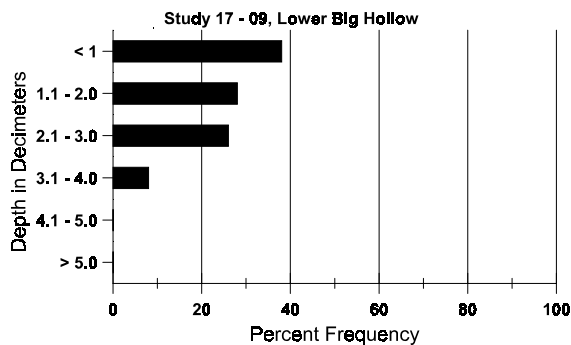
Cover Type	Nested Frequency		Average Cover %			
	'96	'02	'83	'89	'96	'02
Vegetation	368	316	.50	5.50	43.07	38.29
Rock	207	215	7.75	13.75	10.48	13.89
Pavement	144	189	1.75	9.50	2.45	5.50
Litter	397	382	79.00	65.00	58.93	54.93
Cryptogams	21	6	1.50	.75	.15	.56
Bare Ground	131	181	9.50	5.50	3.63	12.10

SOIL ANALYSIS DATA --

Herd Unit 17, Study no: 09, Lower Big Hollow

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
14.5	49.5 (16.0)	7.1	49.8	19.4	30.7	3.0	13.2	128.0	.6

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 17 , Study no: 9

Type	Quadrat Frequency		Pellet Transect	
	'96	'02	Pellet Groups per Acre '02	Days Use per Acre (ha) '02
Rabbit	3	-	-	-
Elk	3	2	52	4 (10)
Deer	8	8	496	38 (94)

BROWSE CHARACTERISTICS --

Herd unit 17 , Study no: 9

A Y G R E		Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Amelanchier alnifolia																		
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	4	-	-	-	-	-	-	-	-	4	-	-	-	266			4
	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	02	-	6	-	-	7	-	-	-	-	6	-	7	-	260			13
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	3	1	-	-	-	-	-	-	-	4	-	-	-	80	47	73	4
	02	-	-	2	-	-	-	2	-	-	4	-	-	-	80	29	24	4
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	-	-	1	-	-	-	2	-	-	1	-	-	2	60			3
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
% Plants Showing		Moderate Use			Heavy Use			Poor Vigor			%Change							
'83		00%			00%			00%										
'89		00%			00%			00%			-55%							
'96		17%			00%			00%			+70%							
'02		65%			15%			45%										
Total Plants/Acre (excluding Dead & Seedlings)														'83	0	Dec:	0%	
														'89	266		0%	
														'96	120		0%	
														'02	400		15%	

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata vaseyana																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	7	-	-	-	-	-	-	-	-	7	-	-	-	140		7	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	83	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2	
	89	3	-	-	-	-	-	-	-	-	3	-	-	-	200		3	
	96	17	-	-	-	-	-	-	-	-	17	-	-	-	340		17	
	02	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
M	83	13	4	-	-	-	-	-	-	-	17	-	-	-	1133	31 46	17	
	89	1	3	-	-	-	-	-	-	-	4	-	-	-	266	28 30	4	
	96	40	5	-	-	1	-	-	-	-	46	-	-	-	920	26 50	46	
	02	59	10	1	-	-	-	-	-	-	70	-	-	-	1400	28 43	70	
D	83	3	2	-	-	-	-	-	-	-	4	-	1	-	333		5	
	89	6	16	-	-	-	-	-	-	-	13	1	-	8	1466		22	
	96	3	11	-	-	-	-	-	-	-	13	-	-	1	280		14	
	02	19	2	-	-	2	-	-	-	-	13	-	-	10	460		23	
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	580		29	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	780		39	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		25%			00%			04%			+17%							
'89		66%			00%			28%			-20%							
'96		22%			00%			01%			+20%							
'02		15%			01%			10%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	1599	Dec:	21%			
												'89	1932		76%			
												'96	1540		18%			
												'02	1920		24%			
Cercocarpus montanus																		
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	-	1	-	-	-	-	-	-	-	1	-	-	-	66	45 39	1	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0	69 82	0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		100%			00%			00%										
'96		00%			00%			00%										
'02		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-			
												'89	66		-			
												'96	0		-			
												'02	0		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Gutierrezia sarothrae																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	83	3	-	-	-	-	-	-	-	-	3	-	-	-	200	13	6	3
	89	25	-	-	-	-	-	-	-	-	25	-	-	-	1666	11	12	25
	96	15	-	-	-	-	-	-	-	-	15	-	-	-	300	12	16	15
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0	9	10	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'83			00%			00%			+88%							
		'89			00%			00%			-78%							
		'96			00%			00%										
		'02			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	200	Dec:	-			
												'89	1666		-			
												'96	360		-			
												'02	0		-			
Mahonia repens																		
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20	-	-	1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'83			00%			00%										
		'89			00%			00%										
		'96			00%			00%										
		'02			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-			
												'89	0		-			
												'96	20		-			
												'02	0		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Opuntia spp.																		
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	9	-	-	-	-	-	-	-	-	-	-	-	-	600		9	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	83	14	-	-	-	-	-	-	-	-	14	-	-	-	933	6	8	14
	89	9	-	-	-	-	-	-	-	-	9	-	-	-	600	6	14	9
	96	8	-	-	2	-	-	-	-	-	10	-	-	-	200	5	14	10
	02	4	-	-	-	-	-	-	-	-	4	-	-	-	80	4	11	4
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	02	4	-	-	-	-	-	-	-	-	1	-	-	3	80		4	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%			+22%							
'89		00%			00%			00%			-83%							
'96		00%			00%			00%			-20%							
'02		00%			00%			38%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	933	Dec:	0%			
												'89	1200		0%			
												'96	200		0%			
												'02	160		50%			
Purshia tridentata																		
M	83	1	-	-	-	-	-	-	-	-	1	-	-	-	66	16	24	1
	89	-	2	-	-	-	-	-	-	-	2	-	-	-	133	12	18	2
	96	-	3	2	-	1	-	-	-	-	6	-	-	-	120	27	75	6
	02	-	-	2	-	-	-	-	1	-	3	-	-	-	60	26	66	3
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	1	-	-	-	-	-	-	-	1	-	-	-	20		1	
	02	-	-	2	-	-	1	-	-	-	2	-	-	1	60		3	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%			+50%							
'89		100%			00%			00%			+ 5%							
'96		71%			29%			00%			-14%							
'02		00%			83%			17%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	66	Dec:	0%			
												'89	133		0%			
												'96	140		14%			
												'02	120		50%			

A Y G R E	Form Class (No. of Plants)	Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total					
		1	2	3	4		1	2						
Quercus gambelii														
Y	83	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	-	-	-	-	-	-	-	-	-	0		0
	96	10	-	-	-	-	-	-	-	-	-	200		10
	02	5	-	-	13	-	-	4	-	-	-	440		22
M	83	-	-	-	-	-	-	-	-	-	-	0	-	0
	89	-	-	-	-	-	-	-	-	-	-	0	-	0
	96	49	-	-	-	-	-	-	-	-	-	980	36	49
	02	87	11	-	8	-	-	7	4	-	-	2340	32	117
D	83	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	-	-	-	-	-	-	-	-	-	0		0
	96	-	1	-	-	-	-	-	-	-	1	20		1
	02	3	-	-	-	-	-	-	-	-	2	60		3
X	83	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	-	-	-	-	-	-	-	-	-	0		0
	96	-	-	-	-	-	-	-	-	-	-	20		1
	02	-	-	-	-	-	-	-	-	-	-	620		31
% Plants Showing		Moderate Use		Heavy Use		Poor Vigor		%Change						
'83		00%		00%		00%								
'89		00%		00%		00%								
'96		02%		00%		02%		+58%						
'02		08%		00%		01%								
Total Plants/Acre (excluding Dead & Seedlings)											'83	0	Dec:	0%
											'89	0		0%
											'96	1200		2%
											'02	2840		2%
Symphoricarpos oreophilus														
Y	83	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	-	-	-	-	-	-	-	-	-	0		0
	96	-	-	-	1	-	-	-	-	-	-	20		1
	02	-	-	-	-	-	-	-	-	-	-	0		0
M	83	-	-	-	-	-	-	-	-	-	-	0	-	0
	89	-	-	-	-	-	-	-	-	-	-	0	-	0
	96	3	-	-	1	-	-	-	-	-	-	80	19	4
	02	3	-	-	4	-	1	-	-	-	-	160	25	8
% Plants Showing		Moderate Use		Heavy Use		Poor Vigor		%Change						
'83		00%		00%		00%								
'89		00%		00%		00%								
'96		00%		00%		00%		+38%						
'02		00%		13%		00%								
Total Plants/Acre (excluding Dead & Seedlings)											'83	0	Dec:	-
											'89	0		-
											'96	100		-
											'02	160		-